CDP0700

METHODS, ARTICLES AND APPARATUS FOR ADVERTISING BASED ON AN ATTRIBUTE OF A COMPUTER NETWORK RESOURCE

Technical Field .

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The present invention relates to methods, articles and apparatus for advertising.

Background of the Invention

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Many Internet portals provide a search engine with which a user may initiate an Internet search. The search engine returns a list of Web pages based upon a search expression received from the user.

15   Some search engines display a similarity value for each Web page in the list. Each similarity value numerically indicates a degree of correlation or relevance between its corresponding Web page and the search expression.

20   Oftentimes, the Web pages in the list are sorted based on the similarity values. By sorting the Web pages in this manner, the list presents highly-relevant Web pages before lesser-relevant Web pages.

Some Internet portals provide directories of Web

25   pages. These directories provide a tree-like structure of categories and subcategories within which Web pages are classified.

DoubleClick, Inc. provides various Internet advertising solutions. These solutions include

30   providing advertising for an Internet portal at

www.AltaVista.com.   Advertising on a search results
page may be targeted based upon a keyword in a search
expression submitted to www.AltaVista.com.

5   Brief Description of the Drawings

        The present invention is pointed out with
particularity in the appended claims. However, other
features are described in the following detailed
10 description in conjunction with the accompanying
drawings in which:
        FIG. 1 is a block diagram of an embodiment of a
system for providing advertising; and
        FIG. 2 is a block diagram of another embodiment of
15 a system for providing advertising.

        Detailed Description of Preferred Embodiments

        Improved methods, articles and apparatus for
20 advertising are disclosed herein. Advertising for a
Web resource is targeted and/or accounted for based
upon an advertiser-usable variable specific to the Web
resource. The advertiser-usable variable is provided
by a referring Web resource having a hyperlink to the
25 Web resource. The advertiser-usable variable may
comprise either a similarity value between the Web
resource and a search expression, a similarity value
between the Web resource and the referring Web
resource, or a tree-defined attribute of the Web
30 resource, for example.

After the hyperlink is user-selected from the referring Web resource, an advertisement is selected from a plurality of advertisements based on the advertiser-usable variable. The advertisement is

5   provided to the client node to display with the Web resource.

In this way, different referring Web resources providing a hyperlink to the Web resource may provide different values of the advertiser-usable variable

10   specific to the Web resource. For example, one referring Web resource may use one tree to define a tree-defined attribute of the Web resource, and another referring Web resource may use a different tree to define a tree-defined attribute of the Web resource.

15   Thus, different ones of the advertisements may be displayed with the Web resource depending on which referring Web resource's hyperlink was user-selected.

The present disclosure also contemplates a single referring Web resource which provides varying values of

20   the tree-defined attribute of the Web resource. For example, the value of the tree-defined attribute of the Web resource may be dependent upon a search expression which identified the Web resource. Thus, different ones of the advertisements may be displayed with the

25   Web resource for different searches which identified the Web resource.

FIG. 1 is a block diagram of an embodiment of a system for providing advertising. A client node 10 generates and sends a request message 14 to a content

30   node 12 via a computer network (not specifically

illustrated) in accordance with a communication protocol. Examples of the client node 10 include, but are not limited to, a client computer system and a personal digital assistant. Examples of the content node 12 include, but are not limited to, a server computer system. Examples of the computer network include, but are not limited to, an internet, an intranet and an extranet. Examples of the protocol include, but are not limited to, HTTP (hypertext transfer protocol) and WAP (wireless application protocol).

The request message 14 requests a resource, such as a Web resource, from the content node 12. In response to the request message 14, the content node 12 generates and sends one or more response messages to the client node 10 via the computer network. The one or more response messages provides a Web resource 16 to the client node 10 via the computer network.

The Web resource 16 comprises a plurality of user-selectable hyperlinks. For purposes of illustration and example, the user-selectable hyperlinks include a first user-selectable hyperlink 20 to a first Web resource available from a first content node 22, a second user-selectable hyperlink 24 to a second Web resource available from a second content node 26, and a third user-selectable hyperlink 30 to a third Web resource available from a third content node 32. Each of the content nodes 22, 26 and 32 may be embodied by a respective one of three different server computer systems, for example. The content nodes 22, 26 and 32

may have any physical location relative to the content

node 12. For example, each of the content nodes 22, 26

and 32 may be either proximate to or distantly located

from the content node 12. Similarly, each of the

5   content nodes 22, 26 and 32 may have any physical

location relative to others of the content nodes 22, 26

and 32. For example, each of the content nodes 22, 26

and 32 may be located in geographically diverse

locations. Although illustrated with three user-

10 selectable hyperlinks, the Web resource 16 may comprise

any number of user-selectable hyperlinks to a plurality

of Web resources in general.

To identify the plurality of Web resources, the

content node 12 may perform a search based on a search

15 expression received from the client node 10. The

search expression may be user-entered using an input

device such as a keyboard, a touch screen, a touch pad

or a voice input device associated with the client node

10. The search expression may contain one or more

20 words in the form of either a Boolean search expression

or a natural language search expression, for example.

The search expression may include information from a

plurality of user-enterable fields to limit the scope

of the search. The search expression may include an

25 image or encoded audio.

The search performed via the content node 12

yields search results comprising the plurality of Web

resources, the plurality of Web resources being a

subset of a larger set of Web resources. The content

30 node 12 may use scripting code to provide, within the

Web resource 16, the user-selectable hyperlinks associated with the search-identified Web resources.

The Web resource 16 further comprises a plurality of advertiser-usable variables within at least one
5   script 34. Each of the at least one script 34 may include script code either directly within the Web resource 16, or within a separate file called by computer program code within the Web resource 16. Examples of programming languages for the at least one
10   script 34 include, but are not limited to, JavaScript and VBScript.

For purposes of illustration and example, the advertiser-usable variables include one or more advertiser-usable variables 36 specific to the first
15   Web resource, one or more advertiser-usable variables 40 specific to the second Web resource, and one or more advertiser-usable variables 42 specific to the third Web resource. Each of the one or more advertiser-usable variables 36, 40 and 42 has a corresponding
20   value usable by an advertisement server node 44 to select advertising content to display with its corresponding Web resource. The advertisement server node 44 may be embodied by a server computer system, for example. The advertisement server node 44 may have
25   any physical location relative to the content nodes 12, 22, 26 and 32.

In the case of the Web resource 16 providing search results, the one or more advertiser-usable variables 36 may indicate a similarity value between
30   the search expression and the first Web resource, the

one or more advertiser-usable variables 40 may indicate
a similarity value between the search expression and
the second Web resource, and the one or more
advertiser-usable variables 42 may indicate a

5   similarity value between the search expression and the
third Web resource. Each similarity value indicates a
degree of similarity, relevance or correlation between
the search expression and its corresponding Web
resource. Preferably, each similarly value numerically

10   indicates the degree of similarity, relevance or
correlation. For example, each similarly value may
comprise an integer from 0 to 100. Alternatively, each
similarity value may qualitatively indicate the degree
of similarity, relevance or correlation. For example,

15   each similarity value may indicate either high
similarity, moderate similarity or low similarity.
Regardless of whether the similarity value is
quantitative or qualitative, it is preferred that the
similarity value be capable of indicating a plurality

20   of different levels of similarity. More preferably,
the similarity value is capable of indicating at least
three different levels of similarity.

Alternatively, for both search and non-search
applications, the content node 12 may determine a tree

25   which relates the plurality of Web resources. In this
case, each of the one or more advertiser-usable
variables 36, 40 and 42 may include a value defined by
the tree. The content node 12 may use various
computer-readable data structures to represent the tree

in a computer-readable form using a computer-readable medium.

Before proceeding, a review of trees and graph-related terminology is provided. A graph is definable

5 by a set of nodes and a set of edges joining or associating different pairs of distinct nodes. The edges in the graph may be either directed or undirected.

Alternative terminology may be used to describe

10 the graph. Examples of synonyms of "node" include, but are not limited to, "vertex" and "state". Examples of synonyms of "edge" include, but are not limited to, "arc" and "link". Therefore, the herein-disclosed methods, articles, apparatus, and examples should not

15 be limited by the selected terminology used to describe the graph.

A first node is said to be adjacent to a second node if there is an edge from the first node to the second node. A path is definable by a sequence of

20 nodes wherein each consecutive pair of nodes in the sequence is adjacent.

A tree is a graph having a unique path from a designated node, called a root node, to each of its other nodes. If the tree is undirected, then any of

25 its nodes can be designated to be the root node. An undirected tree can be made into a directed tree by directing all edges away from the designated root node.

Each node in a directed tree, except for the root node, is a child node of a unique parent node from

30 which an edge is directed thereto. Nodes having the

same parent node are called siblings. Nodes of a

directed tree with no children are called leaf nodes.

Nodes having at least one child are called internal

nodes. The level number of a node is defined as the

5   number of edges in the path between the node and the

root node. The height of the tree is the largest level

number of any node.

If each internal node of a rooted tree has m

children, the tree is called an m-ary tree. If m=1,

10   the tree is unary. If m=2, the tree is binary. If

m=3, the tree is ternary.

Each of the Web resources is represented by a

corresponding node of the tree. Relationships between

Web resources are represented by edges in the tree.

15   Examples of edge-represented relationships between

items include, but are not limited to, a degree of

similarity, a hyperlink, an associative link, a state

of being an element of, a state of being contained in,

a state of being associated with, a state of reporting

20   to, a state of being in a category, a state of

depending from, and a state of being a reply to.

The tree may be unary to define a browsing

sequence for the Web resources. In other cases, the

tree is non-unary, i.e. the tree has at least one

25   internal node with two or more child nodes. In some

cases for a non-unary tree, the tree may have more leaf

nodes than a number of child nodes emanating from its

root node. Regardless of whether the tree is unary or

non-unary, it is preferred that the tree has a height

of at least two. In some cases, the tree may have a

height of three or greater.

For Web resources comprising computer-readable

messages, an edge in the tree may indicate that one

5   message is a reply to another message. Thus, a reply

message is a child of its parent message, and two reply

messages to the same parent message are siblings. Each

base message, i.e. each message that begins a new

thread, may have an associated edge to a root node in

10   the tree. If a search is performed, the root node may

represent a Web resource associated with the search

expression. Regardless of whether a search is

performed, the root node may represent a Web resource

associated with a discussion group of which the

15   messages are elements.

In some embodiments, the content node 12 provides

the tree by determining an optimum path tree based upon

a first plurality of similarity values between the

search expression and the Web resources, and a second

20   plurality of similarity values between pairs of the Web

resources. The optimum path tree indicates a

respective optimum path between the search expression

and each of the plurality of Web resources.

The optimum path between the search expression and

25   a Web resource has an optimum function value of

similarity values between the search expression and the

Web resource. Examples of the function whose optimum

value dictates the optimum path include, but are not

limited to, a sum of similarity values between the

30   search expression and the Web resource, and a product

of similarity values between the search expression and
the Web resource. To determine an optimum product of
similarity values, an additive optimum path algorithm
may be performed on a logarithm of the similarity

5   values. For example, if the similarity values are
numerical values between 0% and 100%, then an additive
minimum path algorithm may be performed on a negative
logarithm of the non-zero similarity values, e.g. -
log(similarity value), to determine a maximum product

10   of similarity values.

As is known in the art of network algorithms,
examples of algorithms to compute the shortest paths
include, but are not limited to, Dijkstra's algorithm
and Floyd's algorithm. Those having ordinary skill can

15   review shortest path algorithms on pp. 123-127 of A.
Tucker, Applied Combinatorics, Second Edition, John
Wiley & Sons, 1984, which is hereby incorporated by
reference into this disclosure.

Alternatively, the content node 12 may provide the

20   tree by determining a spanning tree based upon the
first plurality of similarity values and the second
plurality of similarity values. Examples of the
spanning tree include, but are not limited to, an
optimum spanning tree such as a minimum spanning tree,

25   and a search tree.

The optimum spanning tree has an optimum function
value of similarity values. Examples of the function
whose optimum value dictates the optimum spanning tree
include, but are not limited to, a sum of similarity

30   values, and a product of similarity values. To

determine an optimum product of similarity values, an additive optimum spanning tree algorithm may be performed on a logarithm of the similarity values.

As is known in the art of network algorithms,
5   examples of algorithms to compute a minimum spanning tree include, but are not limited to, Kruskal's algorithm and Prim's algorithm. Those having ordinary skill can review minimum spanning trees on pp. 127-131 of A. Tucker, Applied Combinatorics, Second Edition,
10 John Wiley & Sons, 1984, which is hereby incorporated by reference into this disclosure.

Examples of the search tree include, but are not limited to, a depth-first search spanning tree, a breadth-first search spanning tree, or a best-first
15 search spanning tree. Those having ordinary skill can review search trees on pp. 80-122 of A. Tucker, Applied Combinatorics, Second Edition, John Wiley & Sons, 1984, which is hereby incorporated by reference into this disclosure.
20 Each of the one or more advertiser-usable variables 36, 40 and 42 may indicate a level number of its corresponding Web resource within the tree. For example, the one or more advertiser-usable variables 36 may indicate a level number of the first Web resource
25 within the tree, the one or more advertiser-usable variables 40 may indicate a level number of the second Web resource within the tree, and the one or more advertiser-usable variables 42 may indicate a level number of the third Web resource within the tree. Each

level number may be indicated numerically by an integer, e.g. 1, 2, 3, etc.

Alternatively, each of the one or more advertiser-usable variables 36, 40 and 42 may indicate whether its

5   corresponding Web resource is an internal resource of the tree or a leaf resource of the tree. For example, the one or more advertiser-usable variables 36 may indicate that the first Web resource is an internal resource of the tree, and the one or more advertiser-

10 usable variables 40 may indicate that the second Web resource is an internal resource of the tree. As another example, the one or more advertiser-usable variables 36 may indicate that the first Web resource is an internal resource of the tree, and the one or

15 more advertiser-usable variables 40 may indicate that the second Web resource is a leaf resource of the tree. As a further example, the one or more advertiser-usable variables 36 may indicate that the first Web resource is a leaf resource of the tree, and the one or more

20 advertiser-usable variables 40 may indicate that the second Web resource is a leaf resource of the tree.

As another alternative, each of the one or more advertiser-usable variables 36, 40 and 42 may be based on the ancestry of its corresponding Web resource

25 within the tree. The one or more advertiser-usable variables 36 may be based on which of the Web resources having a predetermined level number is an ancestor of the first Web resource in the tree, the one or more advertiser-usable variables 40 may be based on which of

30 the Web resources having the predetermined level number

is an ancestor of the second Web resource in the tree,
and the one or more advertiser-usable variables 42 may
be based on which of the Web resources having the
predetermined level number is an ancestor of the third

5   Web resource in the tree. Of particular interest is
where the predetermined level number is one.

Preferably, each of the one or more advertiser-
usable variables 36, 40 and 42 also identifies its
corresponding Web resource. For example, the one or

10   more advertiser-usable variables 36 may include a
computer address of the first Web resource, the one or
more advertiser-usable variables 40 may include a
computer address of the second Web resource, and the
one or more advertiser-usable variables 42 may include

15   a computer address of the third Web resource. Examples
of each computer address include, but are not limited
to, a uniform resource locator (URL), a uniform
resource name (URN), a uniform resource identifier
(URI) and an internet protocol (IP) address.

20   Alternatively, the one or more advertiser-usable
variables 36 may include a first non-address identifier
of the first Web resource, the one or more advertiser-
usable variables 40 may include a second non-address
identifier of the second Web resource, and the one or

25   more advertiser-usable variables 42 may include a third
non-address identifier of the third Web resource.

In some embodiments, the at least one script 34
includes two advertiser-usable variables for each
hyperlink: one identifying the Web resource

30   corresponding to the hyperlink, and another indicating

either the similarity value or the tree-defined value. Alternatively, a single advertiser-usable variable may both identify the Web resource and indicate either the similarity value or the tree-defined value.

5   The Web resource 16 includes computer program code to generate a request message, such as an advertisement request message 46 or another request message. Based on the computer program code, the client node 10 generates and sends the advertisement request message

10   46 to the advertisement server node 44 via the computer network. The advertiser request message 46 requests a resource, such as a Web resource, from the advertisement server node 44. In response to the advertisement request message 46, the advertisement

15   server node 44 generates and sends one or more response messages to the client node 10 via the computer network. The one or more response messages may provide an advertisement resource 50 to the client node 10 via the computer network. Examples of the advertisement

20   resource 50 include, but are not limited to, visible advertisements such as a banner advertisement, a button advertisement, a badge advertisement, a text link advertisement, a rich media advertisement and a pop-up window advertisement, and audible advertisements. The

25   advertisement resource 50 is displayed with the Web resource 16 by the client node 10. It is noted that providing the advertisement resource 50 is optional.

          Regardless of whether the advertisement resource 50 is provided, the one or more response messages

30   facilitate reading the plurality of advertiser-usable

variables 36, 40 and 42, and providing at least one

cookie 52 for the client node 10 before any of the

user-selectable hyperlinks 20, 24 and 30 have been

user-selected from the Web resource 16 using the client

5   node 10. The at least one cookie 52 stores the

advertiser-usable variables 36', 40' and 42'.

A single cookie may store the all of the

advertiser-usable variables 36', 40' and 42'. In this

case, for example, the single cookie may store a string

10   comprising all of the advertiser-usable variables 36',

40' and 42' and a delimiter to separate the variables.

Alternatively, multiple cookies may store the

advertiser-usable variables 36', 40' and 42'. In this

case, for example, a first cookie may store the one or

15   more advertiser-usable variables 36', a second cookie

may store the one or more advertiser-usable variables

40', and a third cookie may store the one or more

advertiser-usable variables 42'.

In general, the at least one cookie 52 may be

20   either readable or unreadable by the content nodes 12,

22, 26 and 32. Typically, however, the at least one

cookie 52 is unreadable by the content nodes 12, 22, 26

and 32.

After the at least one cookie 52 has been provided

25   to the client node 10, any of the user-selectable

hyperlinks 20, 24 and 30 may be user-selected from the

Web resource 16 using the client node 10. For purposes

of illustration and example, consider the user

selecting the first user-selectable hyperlink 20 from

30   the Web resource 16 using the client node 10. In

response thereto, the client node 10 generates and
sends a request message to the content node 22 via the
computer network. The request message requests a
resource, such as a Web resource, from the content node

5   22. In response to the request message, the content
node 22 generates and sends one or more response
messages to the client node 10 via the computer
network. The one or more response messages provides a
Web resource 54 to the client node 10 via the computer

10   network.

The Web resource 54 includes computer program code
to generate an advertisement request message 56. Based
on the computer program code, the client node 10
generates and sends the advertisement request message

15   56 to the advertisement server node 44 via the computer
network. Based on the advertisement request message
56, the one or more advertiser-usable variables 36'
associated with the Web resource 54 are retrieved from
the at least one cookie 52. Either the advertisement

20   request message 56 or a variable within a script of the
Web resource 54 may identify the Web resource 54 to
facilitate the one or more advertiser-usable variables
36' being distinguished from the other variables 40'
and 42' using the herein-disclosed Web resource

25   identifiers in the at least one cookie 52.

Preferably, the one or more advertiser-usable
variables 36' are retrieved by or otherwise
communicated to the advertisement server node 44. In
this case, the advertisement server node 44 selects an

30   advertisement from a plurality of advertisements based

on the one or more advertiser-usable variables 36'.
Alternatively, the one or more advertiser-usable
variables 36' are retrieved by the client node 10,
which selects an advertisement from a plurality of

5   advertisements based thereon.

The advertisement may be selected using one or
more targeting criteria for the one or more advertiser-
usable variables 36'. For example, some of the
advertisements may have a targeting criterion to enable

10 advertising only with Web resources having a similarity
value within a prespecified range. An advertisement
may have a respective numerical range of acceptable
similarity values (e.g. from 85 to 100), or a
respective qualitative range of acceptable similarity

15 values (e.g. high similarity). In these cases, higher
billing rates may be charged for advertising with Web
resources having higher similarity values (all other
factors being equal).

As another example, some of the advertisements may

20 have a targeting criterion to enable advertising only
with Web resources having a level number within a
prespecified range. An advertisement may have a
respective numerical range of acceptable level numbers
(e.g. only a level number of 1, only a level number of

25 2, level numbers from 3 to 4, or level numbers of 3 and
greater). In some cases, higher billing rates may be
charged for advertising with Web resources having lower
level numbers (all other factors being equal).
Optionally, the tree defining the level number is

unary, such as a browsing sequence for the Web
resources.

As a further example, some of the advertisements
may have a targeting criterion to enable advertising
only with Web resources which are internal resources of
a tree, and others may have a targeting criterion to
enable advertising only with Web resources which are
leaf resources of the tree. In some cases, higher
billing rates may be charged for advertising with
internal resources than for leaf resources (all other
factors being equal).

As a still further example, some of the
advertisements may have a targeting criterion to enable
advertising only with Web resources having an ancestor
resource, at a predetermined level number in the tree,
which meets at least one criterion. In this case, for
example, higher billing rates may be charged for
advertising with Web resources having a higher-
similarity-value ancestor resource at the predetermined
level number (all other factors being equal).

In the case of the advertisement server node 44
selecting the advertisement, the advertisement server
node 44 generates and sends one or more response
messages to provide an advertisement resource 60 to the
client node 10 via the computer network. Examples of
the advertisement resource 60 include, but are not
limited to, visible advertisements such as a banner
advertisement, a button advertisement and a pop-up
window advertisement, and audible advertisements. The

advertisement resource 60 is displayed with the Web
resource 54 by the client node 10.

Optionally, the advertisement server node 44 may
update a data structure associated with the

5   advertisement resource 60 based on the one or more
advertiser-usable variables 36'. The data structure
may include a count which is incremented based on the
one or more advertiser-usable variables 36'. The count
may indicate a number of impressions of the

10   advertisement resource 60 for a particular range of an
advertiser-usable variable. Alternatively, the count
may indicate a number of click-throughs of the
advertisement resource 60 for a particular range of an
advertiser-usable variable. Each particular range may

15   comprise a single value or a plurality of values.

The data structure is used to generate an
advertising report associated with the advertisement
resource 60. The advertising report may include a
breakdown of a number of impressions and/or click-

20   throughs for each particular range of an advertiser-usable
variable.

Similar acts are performed in response to user-
selection of the second user-selectable hyperlink 24
from the Web resource 16 using the client node 10. In

25   particular, (a) a request message is generated and sent
to the content node 26 via the computer network, (b)
the content node 26 provides to the client node 10 via
the computer network a second Web resource including
computer program code to generate an associated

30   advertisement request message, (c) the client node

generates and sends the advertisement request message
to the advertisement server node 44, (d) the
advertising request message associated with the second
Web resource is received by the advertisement server
5   node 44, (e) the one or more advertiser-usable
variables 40' is retrieved from the at least one cookie
52, (f) an advertisement from the plurality of
advertisements is selected based on the one or more
advertiser-usable variables 40', and (g) and the
10   advertisement is provided to display with the second
Web resource by the client node 10. Similar acts are
performed in response to user-selection of the third
user-selectable hyperlink 30 from the Web resource 16
using the client node 10.

15   FIG. 2 is a block diagram of another embodiment of
a system for providing advertising. The embodiment of
FIG. 2 differs from the embodiment of FIG. 1 in that
the advertisement server node 44, upon receiving the
advertisement request message 46, reads the plurality
20   of advertiser-usable variables 36, 40 and 42, and
stores corresponding advertiser-usable variables 36",
40" and 42" in a database 70 before any of the user-
selectable hyperlinks 20, 24 and 30 have been user-
selected from the Web resource 16 using the client node
25   10.

        Further, the advertisement server node 44
optionally provides at least one cookie 72 for the
client node 10 before any of the user-selectable
hyperlinks 20, 24 and 30 have been user-selected from
30   the Web resource 16 using the client node 10. The at

least one cookie 72 stores an identification code 74.
The database 70 also stores an identification code 74″
corresponding to the identification code 74.   The
identification codes 74 and 74″ are used to associate

5   the advertiser-usable variables 36″, 40″ and 42″ in the
database 70 to the client node 10.   The database 70 may
use various computer-readable data structures to store
the identification code 74″ and the advertiser-usable
variables 36″, 40″ and 42″ in a computer-readable form

10   using a computer-readable medium.

In general, the at least one cookie 72 may be
either readable or unreadable by the content nodes 12,
22, 26 and 32.   Typically, however, the at least one
cookie 72 is unreadable by the content nodes 12, 22, 26

15   and 32.

Alternatively, the identification code 74 may not
be included in at least one cookie 72 and/or may not be
provided by the advertisement server node 44.   In these
cases, the identification code 74 may be pre-stored in

20   the client node 10 to uniquely identify the client node
10.   In this case, the advertisement server node 44 may
read the identification code 74 from the client node
10, and thereafter store the corresponding
identification code 74″ in the database 70 and

25   associate the corresponding identification code 74″
with the advertiser-usable variables 36″, 40″ and 42″.

After the advertiser-usable variables 36″, 40″ and
42″ have been stored in the database 70, any of the
user-selectable hyperlinks 20, 24 and 30 may be user-

30   selected from the Web resource 16 using the client node

10. For purposes of illustration and example, consider the user selecting the first user-selectable hyperlink 20 from the Web resource 16 using the client node 10. In response thereto, the client node 10 generates and sends a request message to the content node 22 via the computer network. The request message requests a resource, such as a Web resource, from the content node 22. In response to the request message, the content node 22 generates and sends one or more response messages to the client node 10 via the computer network. The one or more response messages provides a Web resource 54 to the client node 10 via the computer network.

The Web resource 54 includes computer program code to generate the advertisement request message 56. Based on the computer program code, the client node 10 generates and sends the advertisement request message 56 to the advertisement server node 44 via the computer network. Based on the advertisement request message 56, the advertisement server node 44 uses the identification code 74 from the client node to retrieve one or more advertiser-usable variables 36" associated with the Web resource 54 from the database 70. Either the advertisement request message 56 or a variable within a script of the Web resource 54 may identify the Web resource 54 to facilitate the one or more advertiser-usable variables 36" being distinguished from the other variables 40" and 42" using the herein-disclosed Web resource identifiers in the database 70.

The advertisement server node 44 selects an
advertisement from a plurality of advertisements based
on the one or more advertiser-usable variables 36".
The advertisement server node 44 generates and sends
5   one or more response messages to provide the selected
advertisement resource 60 to the client node 10 via the
computer network. The advertisement resource 60 is
displayed with the Web resource 54 by the client node
10.

10   Similar acts are performed in response to user-
selection of either the second user-selectable
hyperlink 24 or the third user-selectable hyperlink 30
from the Web resource 16 using the client node 10.
Although not specifically illustrated, the database 70
15   typically stores identification codes and associated
advertiser-usable variables for a plurality of
different client nodes.

With reference to either FIG. 1 or FIG. 2, each of
the client node 10, the content node 12, the content
20   node 22, the content node 26, the content node 32 and
the advertisement server node 44 may comprise one or
more programmed computers. Each programmed computer
may provide a particular functionality implemented
using hardware and/or software and/or firmware.

25   Preferably, each programmed computer includes a
processor responsive to a computer memory to perform a
series of specifically identified operations dictated
by a computer program. In this way, the computer
program can cause the computer to act in a particular
30   fashion.

Examples of the processor include, but are not limited to, a general purpose microprocessor, an application-specific integrated circuit (which may be either standard or custom), one or more discrete logic elements, a digital signal processor, one or more circuits, or any combination thereof. It is noted that the processor may be embodied by either a single processing unit or a plurality of processing units.

Examples of the computer memory include, but are not limited to, an electronic memory, a magnetic memory, an optical memory, and a magneto-optical memory. Examples of an electronic memory include, but are not limited to, a programmable electronic memory and a read-only, hard-wired electronic memory. Examples of a magnetic memory include, but are not limited to, a magnetic disk and a magnetic tape. The magnetic disk may be embodied by a magnetic floppy diskette or a magnetic hard drive, for example. Examples of an optical memory include, but are not limited to, an optical disk. The optical disk may be embodied by a compact disk or a DVD, for example. Regardless of its form, the computer memory may be either read-only, once-writable, or rewritable.

In general, the processor may be responsive to any data structures, computer programs, and signals encoded on a computer-readable medium to perform an embodiment of any of the herein-disclosed methods and examples. Examples of the computer-readable medium include, but are not limited to, computer-readable storage media and computer-readable communication media. Examples of

computer-readable storage media are described with
reference to the computer memory. Examples of
computer-readable communication media include, but are
not limited to, an optical medium, an electronic

5   medium, and an electromagnetic medium.

The client node 10 may cooperate in a client-
server fashion with the advertisement server node 44
and the content nodes 12, 22, 26 and 32, for example.
The client node 10 communicates with the advertisement

10   server node 44 and the content nodes 12, 22, 26 and 32
in accordance with a communication protocol. Examples
of the protocol include, but are not limited to, HTTP
and WAP.

The client node 10 includes a display device to

15   display Web resources and selected advertisement
resources. Examples of the display device include, but
are not limited to, a computer monitor, a television, a
liquid crystal display, a cathode ray tube, and a gas
plasma display.

20   The client node 10 receives user-initiated
selections and other user input from one or more user
input devices. Examples of input devices include, but
are not limited to, a pointing device, a keyboard, and
a voice input device. Examples of pointing devices

25   include, but are not limited to, a mouse, a touchpad, a
trackball, a joystick, a pointing stick and a
touchscreen.

A selection of a hyperlink is detected in response
to a user-initiated event. Examples of the user-

30   initiated event include, but are not limited to, an on-

click event, a double-click event, a mouse-move event,
a mouse-over event, a mouse-out event, a mouse-up
event, and a key depression event. The display and the
one or more user input devices facilitate user
5   interaction with the client node 10.

The client node 10 includes a transceiver to
communicate with the computer network. Examples of the
transceiver include, but are not limited to, a modem, a
network interface, and a wireless transceiver.

10   It is noted that each of the herein-disclosed Web
resources may include computer program code in a markup
language such as hypertext markup language (HTML),
wireless markup language (WML) or handheld device
markup language (HDML). For example, some of the
15   herein-disclosed Web resources may comprise World Wide
Web pages.

It will be apparent to those skilled in the art
that the disclosed inventions may be modified in
numerous ways and may assume many embodiments other
20   than the preferred forms specifically set out and
described herein.

Accordingly, it is intended by the appended claims
to cover all modifications which fall within the true
spirit and scope of the present invention.

25   What is claimed is: